Polls in perspective

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Backgrounder

The Polls in Perspective

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THE POLLS IN PERSPECTIVE

INTRODUCTION

Public opinion polls sometimes show abrupt changes in support for political parties or attitudes towards a policy issue. Different polls may also find very different patterns of support. For example, Angus Reid Associates reported on 10 December 1986 that the Liberal Party had the support of 41% of decided voters, the Conservatives 31%, and the NDP, 28%. They also found that the NDP had 32% voter support in Quebec. The following day, the Gallup poll reported the Liberals as having 45% of the national vote, the Conservatives 30%, and the NDP 25%; this poll, however reported that the NDP had only 16% support in Quebec. Both polls had been conducted between 3 December and 7 December 1986. The findings of at least one of them must be wrong. How should we interpret such results?

Two separate issues are of concern in interpreting the results of public opinion polls: the validity of any particular poll and the reliability of observed trends in a series of polls.[1] Opinion polling organizations have considerably refined their techniques over the past two decades and they are not prone to the kinds of gross errors found in earlier years when unscientific, non-random polling techniques were common. Nevertheless, four inevitable sources of inaccuracy remain: sampling error, non-sampling error, question phrasing, and the situation confronting the survey respondent.

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(1) A fuller discussion is available in John C. Terry and Richard J. Schultz, "Canadian Electoral Behaviour: A Propositional Inventory" in Orest Kruhlak, et al., The Canadian Political Process, Revised Edition, Holt, Rinehart and Winston, Toronto, 1973, p. 248-285.

SITUATIONAL BIAS

A. Perceptions

An answer to a question is not simply an expression of opinion - it is also a response to several other stimuli. These include the respondent's mood, the interviewer's attitude, the respondent's reaction to the interviewer, how anxious the respondent is to conclude the interview (which affects how much thought he or she will give to the answer) and so on. A critical factor is the respondent's perception of the situation to which, or context in which, the question applies.

The situational factor particularly affects polls on voting intentions between election campaigns. Typically, respondents are asked: "If a Canadian federal election were held today, which one of the following parties would you vote for?" The undecided are then asked: "Perhaps you have not made up your mind; is there nevertheless a party you might be inclined to support?" Those expressing an inclination are then counted as decided voters. The fact is, however, that an election is not being held that day and very few citizens are unaware of that. Voters who consistently vote for the same party regardless of campaign effectiveness, leadership changes, scandals, or the identity of candidates, are giving reliable answers. Those who are affected by such things may vote as they say they will, may change their minds, or may not vote at all when election day comes. In this instance, people's perceptions of a non-existent situation affect the accuracy of a snapshot picture of the electorate at a given point in time.

B. The Changing Electorate

The moving picture of the electorate - that is, of trends in party support over time - is affected by a different factor: the change in the electorate. We conclude too easily that change in party support in the country as a whole or in a particular region means that voters have changed their minds. Some, often many, undoubtedly have (and may well change them again before the next election). We forget, however, that

one component of change is change in the electorate itself. People die, hundreds of thousands of them, in a normal period of about four years from one election to the next, and are replaced by many hundreds of thousands of young people who come of voting age. If we anticipate an election two years hence, it might make sense to include 17 and 18-year olds in the sample, instead of polling only those of voting age today.

People also move; some move from one province to another, affecting regional electoral preferences; some move out of the country. At the same time, a number of immigrants become citizens or landed immigrants and thereby acquire voting rights. The net result is that changes in party support, or in attitudes to issues, partly reflect some people's changing views but also partly reflect changes in the voting population whose collective views we are trying to gauge.

QUESTION PHRASING

The phrasing of a question is vital in opinion polling. Good questionnaire design is a combination of science and art. The question is the stimulus the respondent must confront and the answers can only be as meaningful as the question itself. Question wording is unlikely to affect assessment of party support; one cannot get much clearer than asking which party a respondent intends to vote for. The wording of other questions, however, certainly affects the opinions expressed in the answer. Two cases in point are views about foreign ownership and concern about inflation and unemployment.

In 1983, Decima Research asked in a survey whether the federal government should legislate to encourage greater Canadian ownership of industry. Eighty per cent of respondents said yes. They were then asked whether the government should limit foreign ownership of Canadian industry. Only 60% agreed. When asked whether we should limit foreign

ownership if this would result in jobs lost, only 20% agreed.[2]   What do these results tell us about Canadian economic nationalism?

In its Quarterly Reports from 1980 to 1983, Decima reported results on the question "In your opinion, what is the most important problem facing Canada today - in other words, the one that concerns you personally the most?" As one might expect, inflation was the primary concern in pre-recession times, selected by as many as 36% of respondents in the second quarter of 1981. As the recession grew and unemployment rose, concern about unemployment rose dramatically; inflation was selected as primary concern by only 9% in the last quarter of 1983. At the same time, Goldfarb was also examining concern about economic issues. Instead of asking, like Decima, respondents to choose one issue of concern, Goldfarb asked them to rate several issues on an index ranging from 0 to 100, with 100 representing the highest level of concern.[3] Like Decima, Goldfarb found unemployment the object of most concern in 1983, with an average ranking of 95 points - but inflation was a close second with an average ranking of 89.

As one expert on Canadian public opinion concluded:

> Our data ... dramatize a problem which pervades survey evidence on public opinion: it is folly to act on only one reading of opinion in a domain, especially if that opinion, whether it be general or specific, is evoked in a relatively context-free way ... [E]ven individuals with real, stable and consistent underlying attitudes will respond somewhat randomly to poorly-worded items.(4)

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(2) Allan Gregg, "Politics by Poll", transcript of interview on Realities, TV Ontario, 14 November 1985, p. 7.

(3) Goldfarb Report, 1984, p. 39.

(4) Richard Johnston, Public Opinion and Public Policy in Canada, Vol. 35, Background Studies of the Royal Commission on the Economic Union and Development Prospects for Canada, University of Toronto Press, Toronto, 1986, p. 212, 218.

NON-SAMPLING ERROR

Other forms of error, such as those in recording, coding, and processing responses, do not result from the sampling process itself. Certainly every effort is made to detect, avoid, and correct technical and mechanical mistakes, but equally certainly they still occur. An entertaining example was seen in a sample survey conducted in a Vancouver constituency in the mid-1960s. The same respondents were interviewed twice, once in 1963 and again in 1965; analysis revealed that, according to the coded survey data, 1.8% of them had changed gender between the time of the first interview and the second.[5] A specialist in survey design cautions that "it behooves the research worker to remain severely critical, to search out biases in others and in himself, and to avoid giving the appearance of spurious exactitude."[6]

SAMPLING ERROR

Two kinds of survey error result from the sampling method itself. Most people are already familiar with the first, though they consistently ignore it: this is the fact that, as the standard disclaimer in published poll results points out, "a survey with a sample of this size is accurate within plus or minus 4%, 19 times out of 20". This is statistical or mathematical error derived from probability theory. The second error is caused by variations in the sampling method or the sampling "frame", as explained in Section C below.

Statistically, the margin of error in a survey depends on the size of the sample (regardless of the size of the population, unless that is very small) and the "homogeneity" of the sample; that is, the closer the population approaches unanimity on an issue, the lower the

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(5) J.A. Laponce, People vs. Politics, University of Toronto Press, Toronto, 1969, p. 24.

(6) A.N. Oppenheim, Questionnaire Design and Attitude Measurement, Basic Books, New York, 1966, p. 21.

margin of error. On some issues, homogeneity may significantly reduce error - the vast majority of the population (and of any sample), for example, are opposed to war and in favour of peace. When it comes to party support, however, the public displays very little homogeneity and for practical purposes the margin of error is determined purely by sample size. Decreasing the margin of error to a dramatically low level requires extremely large samples at a very high cost. To reduce error to less than ± 1%, for instance, would require more than 22,500 interviews. We do get occasional surveys of 1,500 to 2,000 respondents with reported error margins of between ± 2.7% and ± 3.2%, but most surveys claim an accuracy of only ± 4%, with a sample of about 1,000 people.

A. National Trends

Figure 1 shows trends in party support since the 1984 federal election, as shown in the monthly Gallup reports. These reports over the past year have been accompanied by newspaper headlines proclaiming "Liberals take the lead", "Conservatives regain the lead", "NDP surges in popularity", "Liberal lead widens", and so on. How much truth there is to these claims is indicated in Figures 2, 3 and 4. Figure 1 illustrates support trends with a shaded confidence interval of ± 4%. Here we may see clearly that there was an emphatic decline in Conservative popularity during 1985 and a rise in support for the Liberal Party. However, statistically, at no point until December 1986 could the Liberals be confidently said to have taken a lead. Throughout 1986, until the December polls, the differences between the two leading parties were within the bounds of the margin of error. There were three occasions in the latter half of 1986 when Conservative support dipped below the shaded confidence interval shown. If we can imagine the confidence interval as a curve, however, rather than a straight line, with its upper edge at the level of the "leading" party, then the level of Conservative support would have been inside the confidence interval until the most recent polls. At one point, in July 1986, the data could have been interpreted as indicating that any of the three parties was in the lead.

Figure 1

FIGURE 1
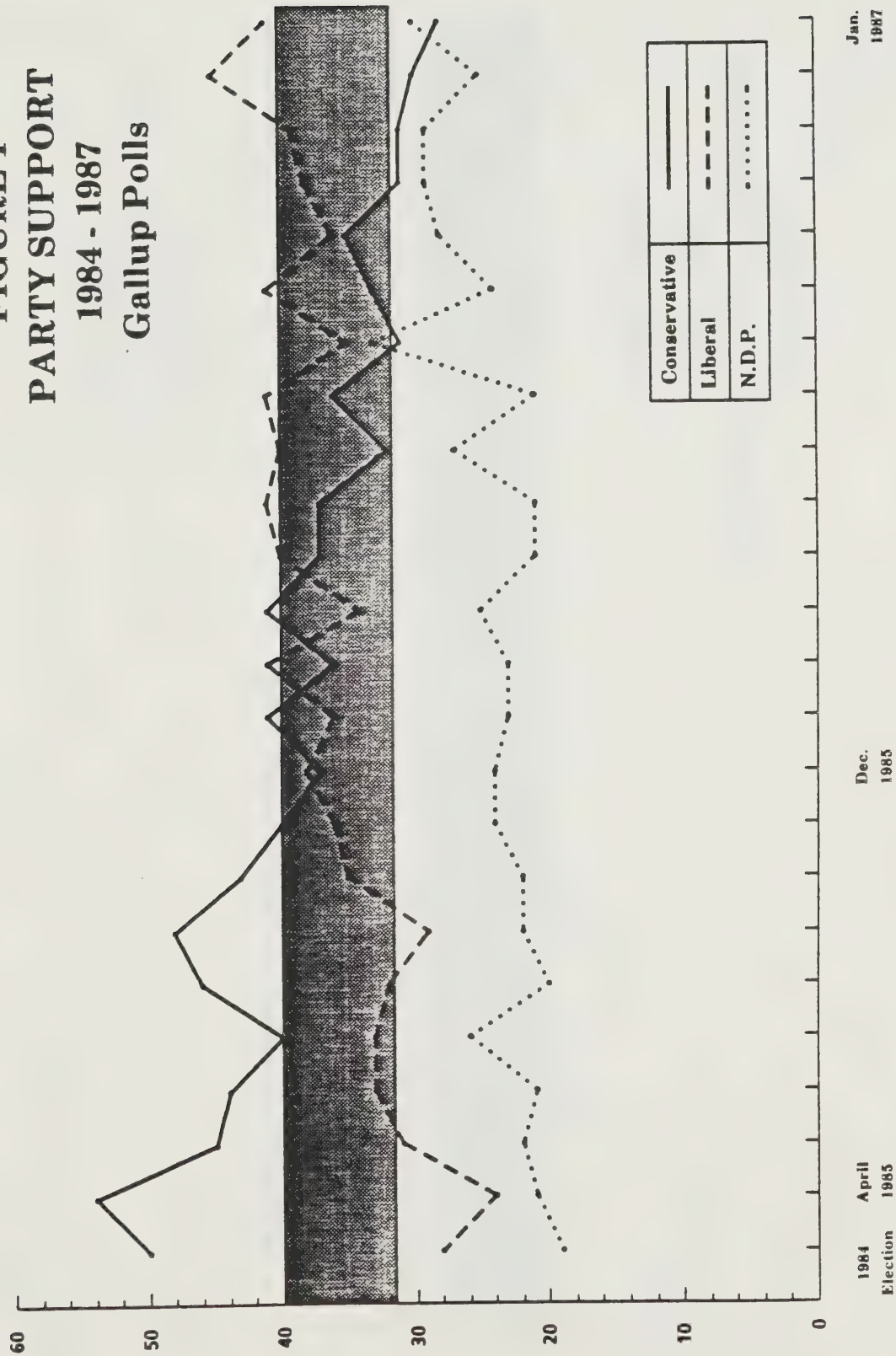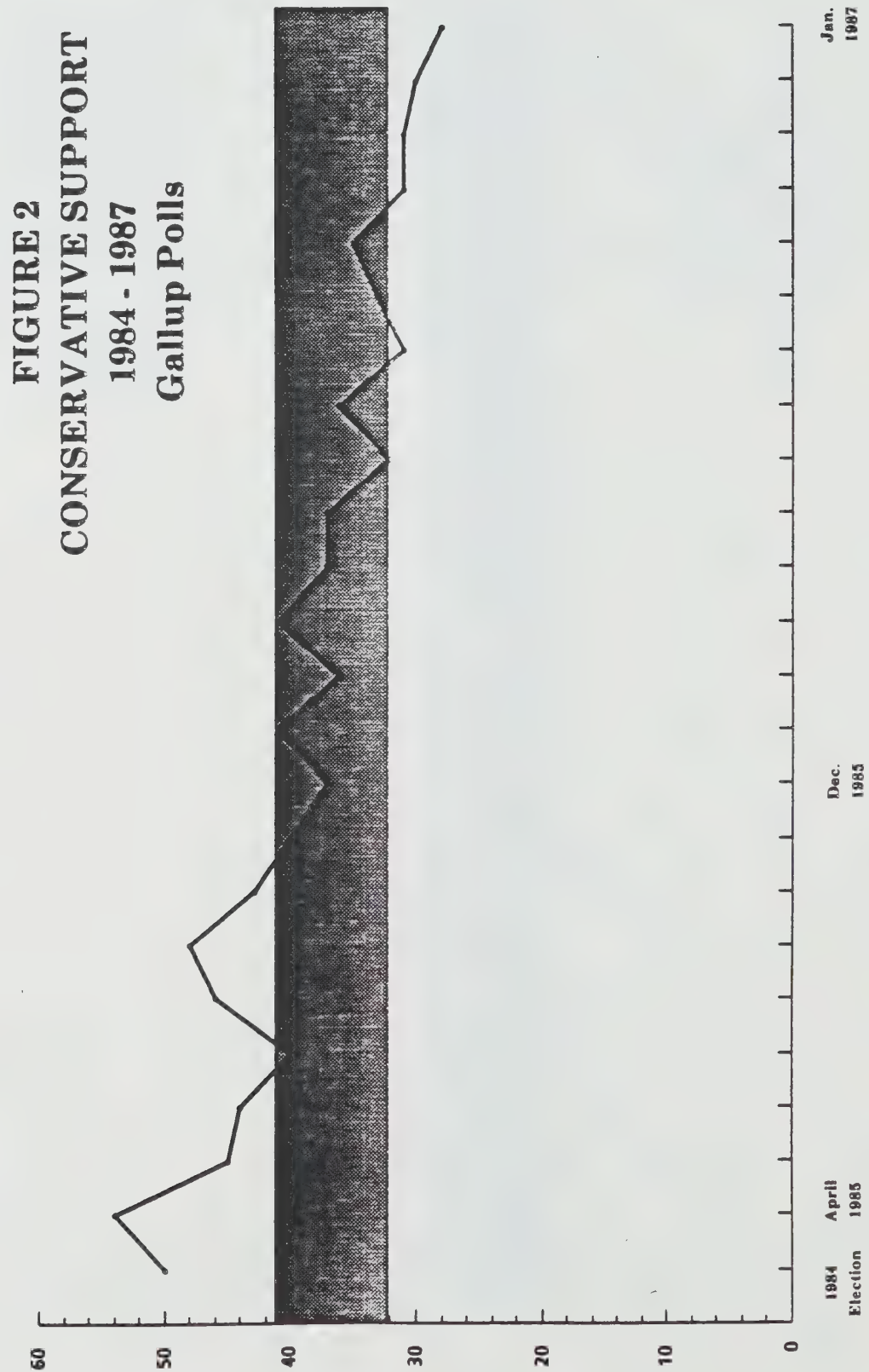PARTY SUPPORT
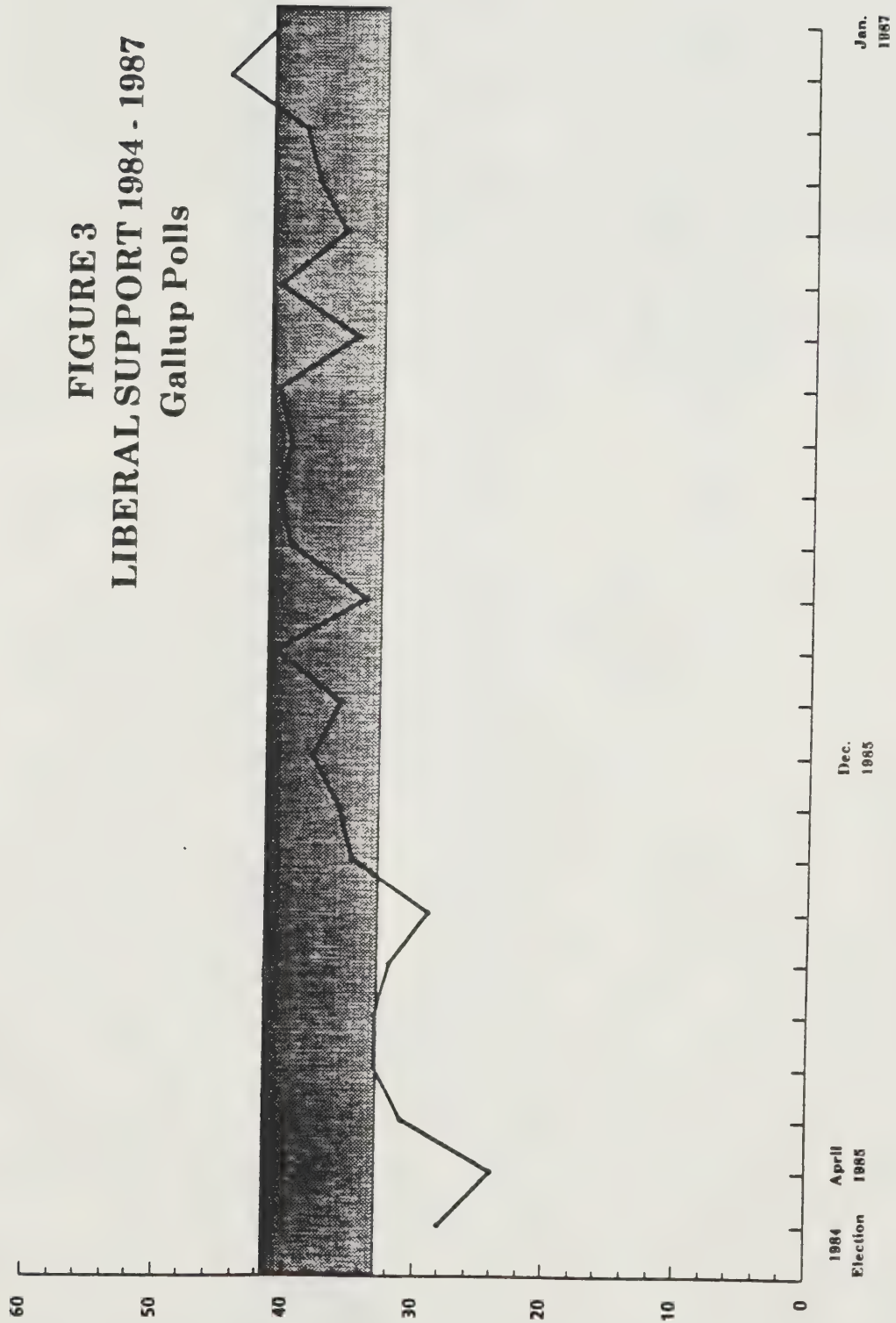1984 - 1987
Gallup Polls

Figure 2

FIGURE 2
CONSERVATIVE SUPPORT
1984 - 1987
Gallup Polls

Figure 3

FIGURE 3
LIBERAL SUPPORT 1984 - 1987
Gallup Polls

Figure 3

Figure 4

FIGURE 4
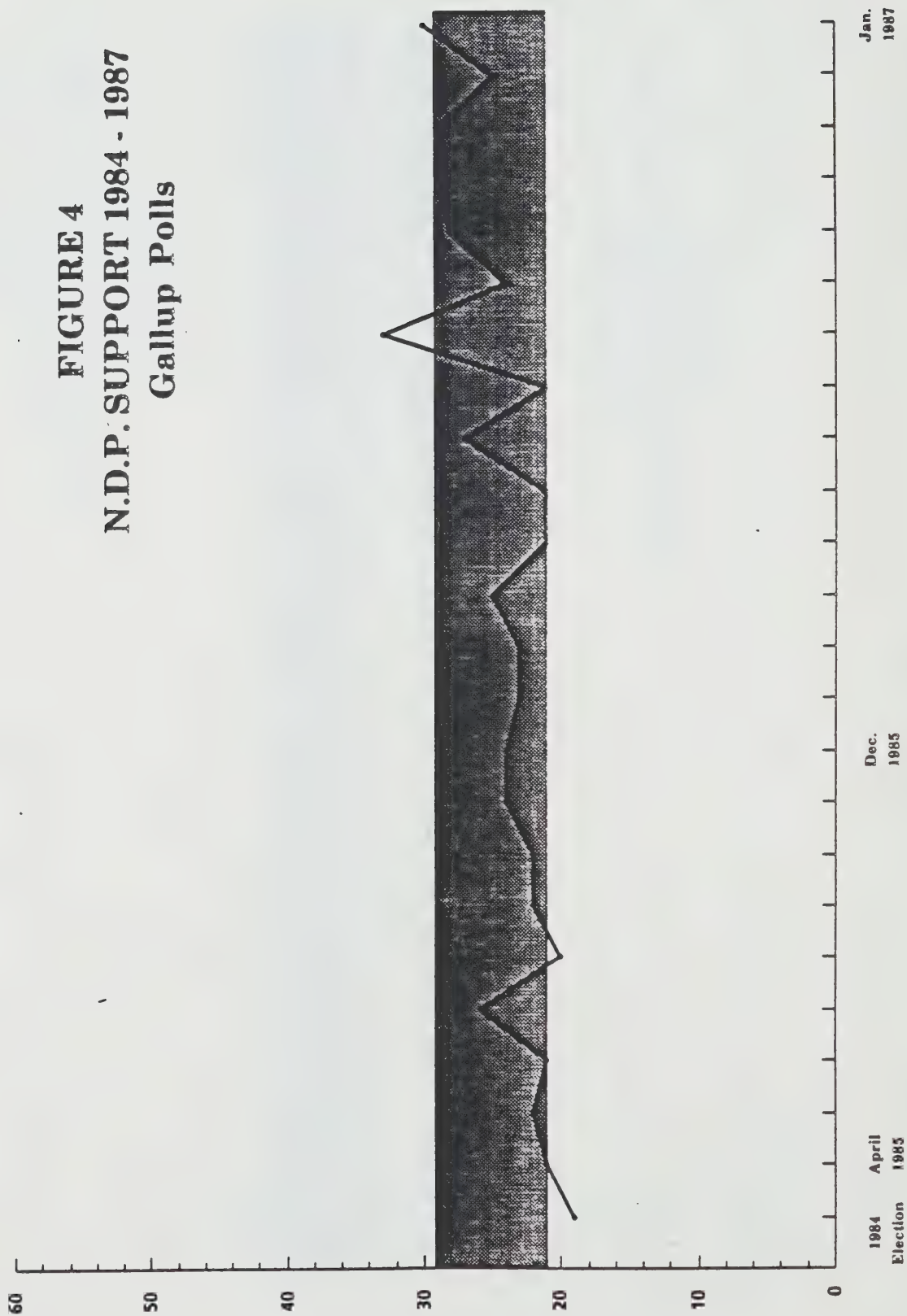N.D.P. SUPPORT 1984 - 1987
Gallup Polls

Figure 2, showing Conservative support in the Gallup polls, emphasizes the drop in the government party's support during 1985 but offers little reinforcement for any argument that it continued to drop in 1986, until the two most recent polls. Similarly, the pattern of Liberal support shown in Figure 3 offers no evidence of increased Liberal support from the fall of 1985 until the surge recorded in December 1986, a surge that was arguably affected by the events and publicity surrounding the Liberal convention. In the most recent poll, January 1987, the Liberal vote is back within the bounds of the confidence interval. Finally, the data in Figure 4 offer no statistical evidence whatsoever of increased - or decreased - support for the NDP over the past two years. The one-poll surge for that party in the summer of 1986 gives the appearance of being precisely what one would statistically expect: the one poll out of twenty that is wrong.

B. Regional Trends

When national poll results are published we are inundated with regional breakdowns of party support as well - and so we should be, since, because of regional concentrations of support, national support for a party does not necessarily imply that it will win seats. As we are not told the sample sizes for each region, however, we are left with the impression that the reported accuracy level of $\pm$ 4% applies to all percentages quoted in the analyses. That is at best an accidental omission and at worst a deliberate attempt to mislead. Failure to report regional sample sizes and their margins of error may account for the recent journalistic controversy over NDP support in Quebec. In December 1986, Gallup showed Quebec NDP support at 16%, (down from 33% in October), Angus Reid showed the NDP at 32% (up from 26% in November), and Environics reported NDP support to be 25% (down 1% since October). In January 1987, Gallup found 30% NDP support in Quebec, and Reid reported 29% support.

The 1984 Goldfarb Report gives a breakdown of regional sample sizes as follows for a total national unweighted sample size of 1,497: British Columbia, 151; Prairies, 266; Ontario, 516; Quebec, 398 (60 of them English-speaking); and the Maritimes, 166. A sample of
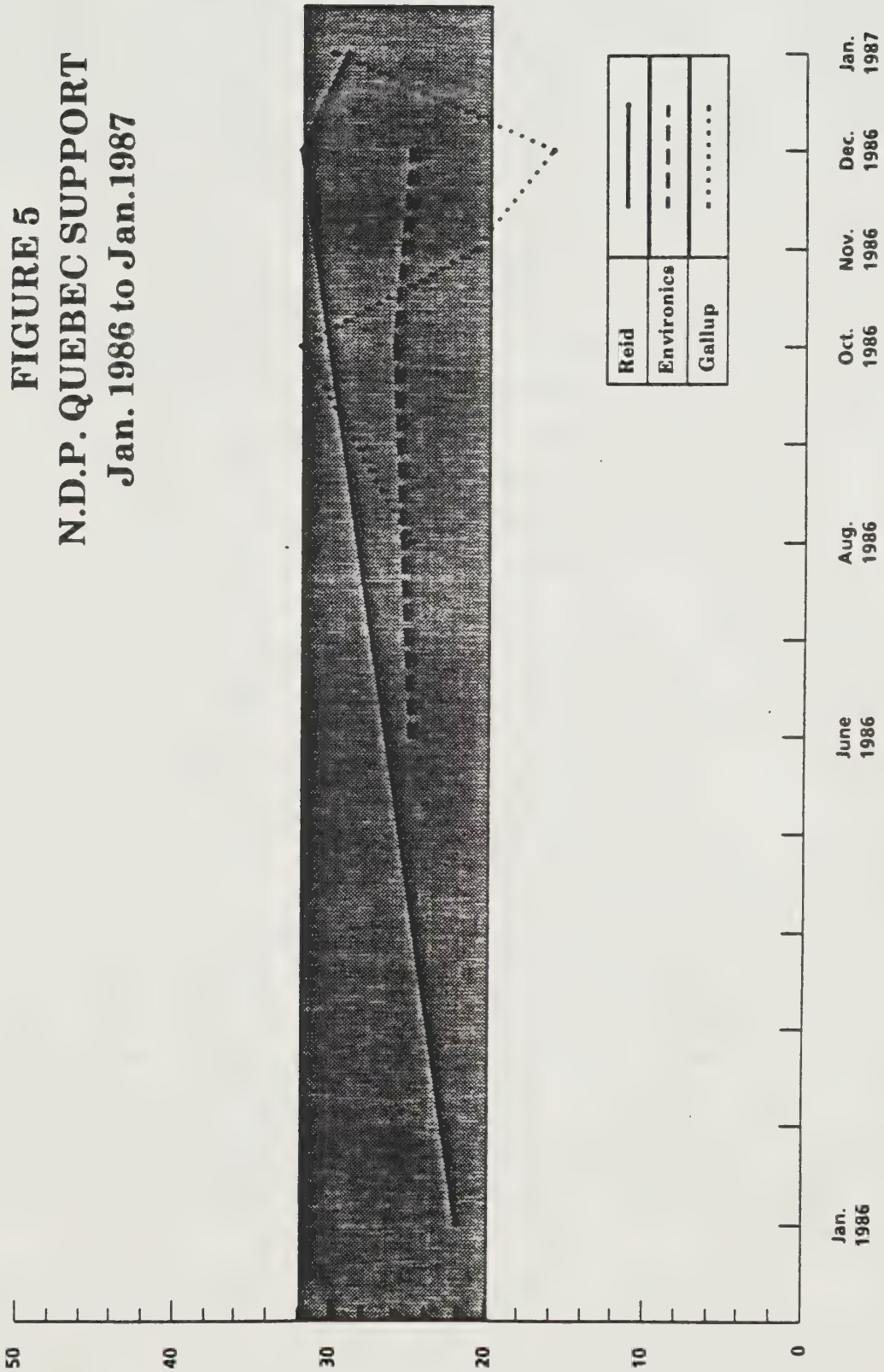
approximately 150 (British Columbia and the Maritimes) has a margin of error of ± 8.2%; the Prairie sample of 266 has a margin of error of ± 6.2% (and a much higher margin of error for statements about individual Prairie provinces, which have less than 100 respondents each); the Quebec margin of error would be over ± 5.0% (and it is ludicrous to infer the views of English-speaking Quebeckers from a sample of only 60); the margin of error for Ontario would be ± 4.5%. In a smaller sample, such as Gallup's, the regional samples would be correspondingly smaller and the margins of error larger. In light of this, one talks of changes or trends in party support in a single province at one's peril. Given the margins of error for Quebec in the different samples, the answer to the question posed in the introduction - which poll is wrong and which right about Quebec - must be: all of them or none of them, Figure 5 displays recent reports of NDP support in Quebec with a ± 6% confidence interval.

C. Sampling Frames

Finally, a word must be said about sampling frames, that is, the structure of the national survey samples. The margins of error discussed above are, mathematically, based on a pure random sample of the population. Because of the dispersal of Canada's population in remote areas, however, a pure random sample would be prohibitively expensive. Accordingly, adjustments are made.

Gallup does not include a statement of sampling methods in its reports, but Goldfarb and Decima do. Goldfarb conducts in-home interviews, drawing its sample from a population that excludes the Yukon, the Northwest Territories, Indian Reserves, and all remote or sparsely populated areas. Some inevitable biases are built into the sampling process, apart from the exclusion of regions. In 1984, one-quarter of the people Goldfarb tried to contact could not be reached at home; of those who were contacted, one-half refused to participate in the survey. People who are rarely at home or who refuse to answer surveys may have characteristics which differentiate them from those who are at home and willing to participate. This fact may contribute to distorted poll results.

Figure 5

FIGURE 5
N.D.P. QUEBEC SUPPORT
Jan. 1986 to Jan.1987

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Decima conducts its interviews by telephone, sacrificing personal contact for wider geographical contact - its sample excludes the Yukon and the Northwest Territories but includes all the remaining Canadian population with telephones. However, in Saskatchewan, Quebec, and Ontario outside of Toronto, Decima's telephone sampling is based on telephone directories, so that those with unlisted or newly acquired telephone numbers are excluded. Telephone interviewing also excludes people who are rarely at home, thereby, like at-home interviews, perhaps missing people with certain characteristics.

All Canadian public opinion surveys intentionally "oversample" the more sparsely populated parts of the country in order to have at least a reasonable number of interviews in each province. This means that the reported survey results for the nation are based on weighted samples, that is, the figures are adjusted to reflect a sample as if it were randomly drawn from the population. For example, in 1984 the 60 people in Prince Edward Island whom Decima interviewed, constituted 4.0% of the total sample, although Prince Edward Island has only 0.5% of the Canadian population. A random sample of the total size used by Decima (1,500) would have included only eight residents of Prince Edward Island. In calculating national averages, Prince Edward Island respondents were "weighted" at 0.1333 out of 1.0. Ontario outside of Toronto constituted 26.7% of the population in the 1981 census, but only 14% of Decima's interviews came from that area - so in national figures, their views were weighted as 1.90 out of 1.0. That sort of weighting procedure does not drastically affect national estimates, but may seriously affect regional projections. Survey reports do not state whether regional estimates are based on weighted or unweighted samples. If they are based on weighted samples, then we are dealing with incredibly small sample sizes, with very large margins of error. If they are based on unweighted sample sizes, it is meaningless to compare the unweighted figures for regions or provinces with weighted national figures which take into account those regions or provinces.

CONCLUSION

Despite the problems inherent in survey methodology, public opinion polls have a commendable record of accuracy, at least as measured against election returns. Polls conducted just prior to elections by reputable firms are rarely (perhaps once in 20 times) far off the mark. There is no reason to expect that they should be any more erroneous in their estimates of opinions or voters' intentions between elections. In interpreting poll findings, however, we should be aware of sources of potential error in them. Particularly with regard to election prognostications, we should be mindful that the polls are assessing a merely hypothetical situation. For those who keep these limitations in mind, public opinion surveys can be useful guides to action.

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